



## INDIANA DEPARTMENT OF TRANSPORTATION

### STANDARDS COMMITTEE MEETING AGENDA

#### *Driving Indiana's Economic Growth*

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March 6, 2006

#### MEMORANDUM

TO: Standards Committee

FROM: Dannie L. Smith, Secretary

RE: Agenda for the March 16, 2006 Standards Committee Meeting

A Standards Committee meeting is scheduled for 9:00 a.m. on March 16, 2006 in the N755 Bay Window Conference Room. Please enter the meeting through the double doors directly in front of the conference room. The following agenda items are listed for consideration.

#### New Business

Item 10-1 105.17	Mr. Kuchler Field Office	3/16/06 100-48	3
Item 10-2 106.01(a)	Mr. Kuchler Approved or <del>Prequalified</del> Materials	3/16/06 100-51	6
Item 10-3 109.04	Mr. Cales Cost Reduction Incentive	3/16/06 11-88	7
Item 10-4 112	Mr. Kuchler <i>Partnering Overhead</i>	3/16/06 100-99	8
Item 10-5 203.20(d)	Mr. Kuchler <i>Rock Backfill</i>	3/16/06 200-34	10
Item 10-6 305.04(e)	Mr. Cales <i>Cement Concrete Pavement Cracking and Sealing</i>	3/16/06 300-9	11
Item 10-7 305.06	Mr. Cales Method of Measurement	3/16/06 300-11	14
Item 10-8 305.07	Mr. Cales Basis of Payment	3/16/06 300-11	15

Item 10-9 503.03(g)	Mr. Kuchler Retrofitted Tie Bars	3/16/06	16
Item 10-10 921.02(d)1a(1)	Mr. Kuchler Optical Performance	3/16/06 900-168	17

Items 1 through 8 are current Recurring Special Provisions.

Item 9 is to reinforce the proper method of installing dowels.

cc: Committee Members (7)	ACPA Representative (1)
Districts (28)	Contech Representative (1)
FHWA (3)	IKO Representative (1)
ICI Representative (1)	Bridgetek Representative (1)
IMAA Representative (1)	INDOT Toll Road (3)
APAI Representative (1)	Traffic Design (3)
ACEC Representative (1)	Estimators (3)
ADS Representative (1)	Specification Writers (4)
Mirich Representative	

REVISION TO 2006 STANDARD SPECIFICATIONS  
SECTION 105, DELETE LINES 792 THROUGH 881.

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SECTION 105, AFTER LINE 882, INSERT AS FOLLOWS:

*The computer shall be in accordance with the requirements shown below.*

1. *Desktop System*
  - a. *Microprocessor: Intel Pentium compatible, 1.9 GHz, or faster*
  - b. *256 MB RAM, or larger*
  - c. *One 1.44 MB 3.5 in. floppy disk drive*
  - d. *One fixed disk (hard drive), minimum 40 GB*
  - e. *24X CD ROM drive, or faster*
  - f. *Sound blaster compatible sound system*
  - g. *An SVGA display adapter, 32 Mb video ram minimum*
  - h. *MPEG video*
  - i. *A minimum of one serial port*
  - j. *One parallel port*
  - k. *One mouse and mouse pad*
  - l. *A 101 key enhanced keyboard, minimum*
  - m. *A 56KB V.90 modem*
  - n. *Operating system shall be Windows XP (Home or Pro). The Contractor shall provide and install in a timely manner all critical updates/patches concerning security and virus control to the Operating Systems when necessary.*
2. *SVGA Display*
  - a. *A 17 in. (432 mm) color display monitor, or larger*
  - b. *1024 X 768 resolution, or better*
  - c. *Dot pitch 0.28 mm, or better*
3. *An inkjet printer shall be provided meeting or exceeding the following.*
  - a. *HP compatible print codes*
  - b. *Fully compatible with DOS programs. HP Deskjet 600 or 900 series or 3820 or 5550. Other brand printers or models are acceptable if they are equal to the above printers and capable of printing from Paradox for DOS. The connection shall be via parallel port. USB connections are not acceptable.*
4. *Software*
  - a. *Paradox, Ver. 4.5 for DOS, if available. If the Contractor cannot provide this software, the Contractor shall notify the appropriate Department District computer specialist.*
  - b. *Microsoft Office XP, or newer*
  - c. *All install CDs for the Operating System, device drivers, and all software installed on the PC shall remain at the construction field office site in case that re-installation or re-configuration is required.*
  - d. *McAfee antivirus software for Windows. This shall be the latest version and shall be fully installed, with Vshield option activated.*

*The Department will provide periodic updates for the DAT and associated files containing new virus names, etc. The Contractor may provide this service if it so desires.*

*5. Miscellaneous Requirements*

- a. Uninterruptible Power Supply (UPS) minimum 280VA/175W (15 minutes) with full time surge suppression and noise isolation, including RJ-11 connections for modem phone line surge protection. American Power Conversion (APC) model Back-UPS Pro 280 (APC part #BP280), or equivalent*
- b. Dust covers for system unit, monitor, and printer*
- c. Black ink cartridges and 8 1/2" by 11" sheet paper for inkjet printers shall be supplied and replenished as needed*
- d. A supplemental phone line in addition to the standard telephone line shall be installed and connected to the PC modem through the UPS surge protection described above. If a supplemental phone line is being installed to accommodate a FAX machine, this same line may be used for joint FAX and PC communications using a line splitter or other appropriate device.*

*The requirements shown herein shall be considered as minimum requirements. Equipment or software which exceeds these requirements may be furnished, except where DOS or Windows is specified.*

*All manuals necessary for operation of the system shall be provided. These shall include manuals for microcomputer operations, Windows operating system, monitor operation, printer operation and code references, and all other manuals or documentation normally furnished with the equipment or software when purchased. Appropriate dust covers shall be provided for all equipment.*

*The initial condition of the field office PC shall be nearly pristine. No owner installed e-mail accounts, games, spyware, online services, applications, network or other profiles shall be set up on this computer prior to placement. If the PC was used in a previous contract, all software not specified above, or otherwise provided by the Department, shall be removed prior to placement in the current field office.*

*The microcomputer system in the field office shall be installed, and maintained in good working order. If a portion of the system becomes defective, inoperative, damaged, or stolen, that portion shall be repaired or replaced within five business days, Mondays through Fridays, after the Contractor is notified of such situation.*

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 105, CONTINUED.

*The Department will be utilizing the hardware and software specified herein to run Construction Management System software applications. These applications are known to run on Intel compatible equipment. If the Department experiences problems running these applications due to requirement compatibility, the Contractor shall, within five business days, Mondays through Fridays, replace and set up appropriate equipment to ensure compatibility to the satisfaction of the Department.*

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Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
105.18 Pg 100-51	Frequency Manual
106.04 Pg 100-55	Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
105-C-056	None
Motion: Mr.	Action: Passed as submitted; revised
Second: Mr.	Effective - _____ Letting
Ayes:	_____ Supplementals
Nays:	Withdrawn. Resubmit? _____
	Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 106, AFTER LINE 47, INSERT AS FOLLOWS:

*The basis for use of materials shown in the List of Approved Materials will be the Engineer's verification that the materials provided are included in the List of Approved Materials.*

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
None	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
106-C-074	None
Motion: Mr.	Action: Passed as submitted; revised
Second: Mr.	Effective - _____ Letting
Ayes:	_____ Supplementals
Nays:	Withdrawn. Resubmit? _____
	Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 109, AFTER LINE 323, INSERT AS FOLLOWS:

*A proposal which uses empirical design (Section 9.7.2 of the AASHTO LRFD Bridge Design Specifications, 2<sup>nd</sup> Edition) of the concrete bridge deck will not be considered or approved.*

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
None	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
109-B-148	None
Motion: Mr.	Action: Passed as submitted; revised
Second: Mr.	Effective - _____ Letting
Ayes:	_____ Supplementals
Nays:	Withdrawn. Resubmit? _____
	Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS  
SECTION 112, BEGIN LINE 1, INSERT AS FOLLOWS:

**SECTION 112 --PARTNERING OVERHEAD**

**112.01 Description**

*When shown on the Itemized Proposal, a partnering program between the Contractor's and the Department's personnel will be a part of the contract. All major players for both the Contractor and the Department will be expected to attend a workshop to develop a statement of goals and monthly follow-up meetings. Players need to attend the follow-up meetings only when they are active in the project. This workshop will be held at a neutral location prior to the preconstruction conference and may include a working lunch if the cost is less than \$10.00 per person.*

**112.02 Requirements**

*The requirements for the workshop shall be as follows:*

**(a) Meeting Room**

*The size of the room and the number of persons in attendance may vary.*

Attendees

Approximate  
Number

<i>Central Office Personnel.....</i>	<i>2</i>
<i>District Construction Engineer.....</i>	<i>1</i>
<i>Area Engineer.....</i>	<i>1</i>
<i>District EEO Officer.....</i>	<i>1</i>
<i>Inspectors or Assistants.....</i>	<i>3</i>
<i>City or County Officials, if applicable.....</i>	<i>3</i>
<i>Designers or Design Consultant.....</i>	<i>2</i>
<i>Testing Personnel (District and Central Office).....</i>	<i>3</i>
<i>Project Engineer.....</i>	<i>1</i>
<i>Prime Contractor, Owner or President.....</i>	<i>1</i>
<i>Prime Contractor's Employees.....</i>	<i>6</i>
<i>Subcontractor's Personnel.....</i>	<i>6</i>
<i>Utilities, if applicable.....</i>	<i>6</i>
<i>Total Approximate Number in Attendance.....</i>	<i>36</i>

**(b) Meeting Length**

*The workshop is expected to last approximately 8 h. The follow-up meetings are expected to last approximately 1 to 2 h.*



REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 112, CONTINUED.

**(c) Facilitator**

*A facilitator shall be provided. Such facilitator shall have expertise in conducting workshops of this nature. The Contractor shall select the facilitator. The facilitator will be subject to approval by the Engineer prior to being contracted for the work. The facilitator shall conduct the workshop, the first follow-up meeting, every third follow-up meeting, and a close-out meeting. The other monthly follow-up meetings will be conducted by the Engineer and Contractor. At the close-out meeting, a statement of successes and failures shall be developed. The facilitator shall compile and publish a summary of these successes and failures for distribution to all players.*

*The partnering workshop shall not take the place of the preconstruction conference. The workshop should take place before the conference.*

**112.03 Method of Measurement**

*Partnering overhead will not be measured for payment.*

**112.04 Basis of Payment**

*Partnering overhead will be paid for at the contract lump sum price for partnering overhead.*

*Payment will be made under the following:*

**Pay Item**

**Pay Unit Symbol**

*Partnering Overhead ..... LS*

*The cost of the room, facilitator, mailings, video and audio equipment required, and all other incidentals shall be included in the cost of partnering overhead.*

Other sections containing specific cross references:	General Instructions to Field Employees
None	Update Required? Y___ N___ By - Addition or Revision
	Frequency Manual
	Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
108-C-078	None
Motion: Mr.	Action: Passed as submitted; revised
Second: Mr.	Effective - _____ Letting
Ayes:	_____ Supplementals
Nays:	Withdrawn. Resubmit? _____
	Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 203, AFTER LINE 710, INSERT AS FOLLOWS:

**(d) Rock Backfill**

*Rock backfill shall consist of placement of quarried limestone or dolomite, Class E or higher in accordance with 904, at the locations shown on the plans. The maximum size shall be 18 in. (450 mm). Larger sizes will be permitted only if they can be readily loaded with a 1 cu yd (0.75 cu m) shovel. The material shall not have more than 10% passing a 1 1/2 in. (37.5 mm) sieve.*

SECTION 203, AFTER LINE 1147, INSERT AS FOLLOWS:

*Backfill, Rock .....TON (Mg)*

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
None	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
203-R-155	None
Motion: Mr.	Action: Passed as submitted; revised
Second: Mr.	Effective - _____ Letting
Ayes:	_____ Supplementals
Nays:	Withdrawn. Resubmit? _____
	Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 305, AFTER LINE 110, INSERT AS FOLLOWS:

**(e) Cement Concrete Pavement Cracking and Seating**

**1. Description**

*This work shall consist of cracking and seating existing cement concrete pavement prior to placement of a HMA overlay.*

**2. Equipment**

*The device used for cracking shall be an impact hammer capable of delivering such energy as may be necessary to satisfactorily crack the pavement as described below. The hammer shall be designed to prevent penetration into or spalling of the existing surface.*

*A pneumatic-tire roller with a body suitable for ballasting with water, with a minimum gross weight of 40 t (36 Mg), shall be used to seat the cracked pavement. The roller shall have four rubber-tired wheels equally spaced across the full width and mounted in line on a rigid steel frame such that all wheels carry equal loads, regardless of surface irregularities. Tires shall be inflated to the pressure necessary to obtain the surface contact pressure to satisfactorily seat the pavement slab. Ballast loading shall be regulated so as to allow the roller to be emptied for crossing bridge structures or other weight-restrictive features. Gauges shall be such that the gross roller weight may be determined in the field. The roller shall be towed with a rubber-tired prime mover.*

**3. Cracking and Seating**

*Subsurface drains shall be installed along the edges of pavement prior to the cracking of the cement concrete pavement. The existing concrete pavement shall be cracked so as to produce full depth, generally transverse, hairline cracks at a nominal longitudinal spacing of 18 to 24 in. (450 to 600 mm). Occasional spacing may be up to 30 in. (750 mm). Not more than 20% of the area, as determined by check sections, may be spaced at greater than 24 in. (600 mm) spacing. A continuous longitudinal crack shall not be formed. The device used for cracking shall not strike directly on existing cracks, joints, or D cracked areas. Such device shall be operated so that the existing crack or joint becomes a part of the desired cracking pattern. The height of the impact hammer shall be 24 in. (600 mm). If this height causes destruction or visible damage to the pavement, the 24 in. (600 mm) dimension may be lowered in 2 in. (50 mm) increments until a cracking pattern determined to be satisfactory is obtained. The height shall not be less than 18 in. (450 mm). The Contractor shall furnish and apply water to dampen the cracked section to enhance the visual determination of the cracking pattern. Flour may be used in lieu of water if it adequately shows the cracking pattern.*

*It may be difficult or impossible to obtain transverse cracks during daylight hours when the ambient and pavement temperatures are high and the pavement is in a high compression mode. When these conditions exist, it may be required that the cracking operation be accomplished at times other than daytime hours. The pavement temperature will be monitored to determine the most feasible time period.*

*Relief joints of 3 to 4 in. (75 to 100 mm) width shall be cut at a minimum of approximately every 1,500 ft (450 m) and a maximum of approximately every 2,000 ft*

(600 m) throughout the length of the pavement that is to be cracked and seated. The relief joints shall be located in pavement areas that are determined to be in structurally sound condition. They shall be cut no closer than 10 ft (3 m) from the nearest contraction joint and at least 24 h prior to the start of the crack and seat operation. The device used to cut the relief joints shall not leave a smooth face on the sides of the joint. The saw cut shall be through the concrete pavement, but shall not cut into the subbase material for a depth of more than 2 in. (50 mm). The cracking operation shall start 24 in. (600 mm) from the first saw cut relief joint and proceed toward the next cut relief joint. If longitudinal cracking occurs at the same point along the 2000 ft (600 m) section, the breaker shall be moved to the next previously sawed relief joint. The direction of operation shall be reversed to eliminate as many longitudinal cracks as possible. Following cracking, the concrete pavement shall be rolled with the specified pneumatic roller. Three passes shall be made.

The Contractor shall furnish and apply water or flour onto a section of pavement a minimum of once each day to verify that the specified crack pattern is being maintained. Additional check sections will be required if problems are encountered. Adjustments shall be made to the energy or striking pattern when the Engineer deems necessary, based on the sections checked or the field conditions.

Once the cracking procedure is completed, the relief joints shall be filled with Class A concrete in accordance with 702. However, the coarse aggregate shall be size No. 11 stone and the cement content shall be a minimum of 752 lb/cu yd (446 kg/m<sup>3</sup>). The concrete shall be consolidated during placement to eliminate voids. All relief joints shall have dowel bars inserted across them to provide load transfer in accordance with 305.04(e)4.

Cracked and seated pavement shall not be exposed for more than 15 calendar days before HMA operations are initiated. The placement of HMA surface materials shall be completed on the pavement lanes prior opening to traffic.

#### **4. Dowel Bar Placement**

Dowel bars shall be used to provide load transfer at each relief joint location.

Dowel bars shall be smooth and epoxy coated, 1.25 in. (31 mm) in diameter by 18 in. (450 mm) long. Chairs used to support dowels shall be of a plastic type for clearance of 1/2 to 1 in. (13 to 25 mm) above the bottom of the saw slot. The separator shall be field constructed with a 1/8 in. (3 mm) minimum foam core construction board. The separator shall be at least as thick as the width of the crack at the time of repair. End caps shall be plastic and shall slide over the end of the dowel bar leaving 1/2 in. (13 mm) for contraction. Type III cement in accordance with 901.01(b) shall be used.

Slots of 2 1/4 to 2 1/2 in. (55 to 65 mm) width shall be made in the pavement as required to accommodate chairs. The length shall be sufficient to permit the dowel bar with cap and chairs to rest on the bottom of the saw slot. The depth shall be  $D/2 + 0.625$  in. ( $D/2 + 16$  mm) plus the effective height of the chair. The saw slot shall be cleaned by means of sand blasting. Remaining sand shall be removed by means of compressed air.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 305, CONTINUED.

*The bar shall be placed with chair, end cap, and separator attached in the slot. End caps shall be placed on alternate ends of the dowel bars. The separator shall extend from the bottom of the slot to the top of the existing pavement. The separator shall be placed in line with one edge of the sawed relief joint. The same edge shall be used for all dowel bars. The dowel shall be tamped into place. The slot shall be filled with type III cement mortar and consolidated with an internal vibrator. Aggregate may be added to the mix only in the material used over the top of the dowels. The filled slot shall be troweled to match the existing pavement. Curing shall be in accordance with the manufacturer's specifications. The filled slot shall be covered during curing with a plastic sheet when the ambient temperature is above 85°F (29°C). The area shall be opened to traffic after curing is complete.*

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
None	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
305-R-431	None
Motion: Mr. Second: Mr. Ayes: Nays:	Action: Passed as submitted; revised Effective - _____ Letting _____ Supplementals  Withdrawn. Resubmit? _____  Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 305, AFTER LINE 150, INSERT AS FOLLOWS:

*Cement concrete pavement cracking and seating will be measured by the square yard (square meter). Saw cutting of relief joints will be measured by the linear foot (meter) of joint cut.*

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
610.05 Pg 600-33	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
305-R-431	None
Motion: Mr.	Action: Passed as submitted; revised
Second: Mr.	Effective - _____ Letting
Ayes:	_____ Supplementals
Nays:	Withdrawn. Resubmit? _____
	Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 305, AFTER LINE 160, INSERT AS FOLLOWS:

*Cement concrete pavement cracking and seating will be paid for at the contract unit price per square yard (square meter) complete in place. The cutting of the sawed relief joints will be paid for at the contract unit price for full depth saw cut.*

SECTION 305, AFTER LINE 164, INSERT AS FOLLOWS:

*Cement Concrete Pavement Cracking and Seating .....SYS (m2)*

SECTION 305, AFTER LINE 169, INSERT AS FOLLOWS:

*Saw Cut, Full Depth..... LFT (m)*

SECTION 305, AFTER LINE 196, INSERT AS FOLLOWS:

*The cost of maintaining the cracked and seated pavement in suitable condition for traffic, if required; placement of dowel bars and concrete filling mixture; all labor; equipment; materials; and necessary incidentals shall be included in the cost of cement concrete pavement cracking and seating.*

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
610.06 Pg 600-33	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
305-R-431	None
Motion: Mr. Second: Mr. Ayes: Nays:	Action: Passed as submitted; revised Effective - _____ Letting _____ Supplementals  Withdrawn. Resubmit? _____  Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 503, BEGIN LINE 134, INSERT AS FOLLOWS:

**(g) Retrofitted Tie Bars**

Retrofitted tie bars shall be secured at right angles to the pavement with a chemical anchor system. *The chemical anchor system shall be injected to the back of the hole to eliminate air pockets prior to inserting the bar. The quantity of material injected shall be sufficient to disperse the material along the entire length of the bar and voids are completely filled. After the anchor system has been injected, the bar shall be fully inserted using a back-and-forth twisting motion, leaving the proper length exposed. If it is necessary to use a hammer to seat the bar, the exposed end shall be protected with a wood block.*

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Additional or Revision
503.03(c) Pg 500-29	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	None
Motion: Mr. Second: Mr. Ayes: Nays:	Action: Passed as submitted; revised Effective - _____ Letting _____ Supplementals  Withdrawn. Resubmit? _____  Received FHWA Approval? _____



REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 921, BEGIN LINE 238, INSERT AS FOLLOWS:

The reflective intensity for yellow reflectors shall be 60% of the value for white. The reflective intensity for red reflectors shall be 25% of the value for white. *The reflective intensity for blue reflectors shall be 10% of the value for white.*

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
None	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	None
Motion: Mr.	Action: Passed as submitted; revised
Second: Mr.	Effective - _____ Letting
Ayes:	_____ Supplementals
Nays:	Withdrawn. Resubmit? _____
	Received FHWA Approval? _____